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absorption of the gas which they use in the manner of a float or air-bladder. The air-bubbles are not connected with the contractile vacuoles, or with the nuclei. The air-bubbles it is important to observe, do not occur in the non-granular protoplasm of the pseudopodia, but in the granular substance, and are not spherical but of an irregular form, which as Dr. Engelmann observes, proves that the protoplasm is not in the condition of aggregation of a fluid. The chemical composition of the gas thus so remarkably developed by the *Arcellæ* was not determined, nor the mechanism (if any exist) of the formation and disappearance of the air-bubbles. The discovery is of importance from two points of view: in the first place, for the development of gas in protoplasm as a physiological phenomenon; in the second place, for the supposed voluntary nature of this development, of which this exceedingly simple organism makes use for the purpose of locomotion.—*Quarterly Journal of Science*.

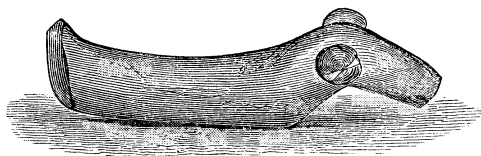
THE LARGEST INFUSORIUM KNOWN. — In the "Institut" of the 24th of January is an interesting paper on the Gregarinadæ, which are well known to represent one of the simplest forms of animal life, consisting of a nucleated cell, which under certain conditions invests itself with a transparent membrane, becoming, as it is termed, incysted. The nucleus disappears and the substance of the body then breaks up into innumerable sporosperms, navicellæ, or elongated minute corpuscles, which, being set free by the bursting of the enclosing capsule, become distributed in the various organs of many animals. A well-marked form is found in the alimentary canal of the common beetle. M. Edouard v. Beneden has lately discovered a remarkable form, to which he has applied the name *Gregarina gigantea*, in the intestine of the lobster. It has been subjected to MM. Gluge and Schwann of the Académie Royale de Belgique for examination, and they report that its length is no less than 16 mm., and its breadth 15 mm., or nearly two-thirds of an inch. It presents, in the membrane which forms its wall, a contractile layer, to which M. Beneden had previously called attention in other species. The interior of the animal is occupied by a viscous liquid containing granular particles, with a nucleus and nucleolus. This last exhibits a remarkable phenomenon. At first it is single, but in the course of a few seconds the nucleus appears to be filled with a large number of small refractile corpuscles, which are so many nucleoli. Some of them then augment considerably in size, whilst the primary nucleolus gradually disappears. With the exception of the yolk of the egg of birds, and some other animals, the *Gregarina gigantea* constitutes the largest known cell. — *The Academy*.

ANTHROPOLOGY.

ABORIGINAL RELIC FROM TRENTON, NEW JERSEY. — In the "Proceedings of the Academy of Natural Sciences of Philadelphia," and in local papers, we have frequently called attention to various large deposits of arrowheads, axes, etc., and to interesting isolated specimens of curi-

ously shaped relics, found in and near this city. We now call attention to the relic figured here as one that is unique, at least so far as New Jersey is concerned. About four and a half inches long it is very accurately sloped to the back, which is a flat ridge, uniformly one-thirty-second of an inch in width, from the neck to the posterior end, which curving upward, is about double that thickness on the edge. The head of the stone is oval, accurately cut, with a width in the centre of three-sixteenths of an inch. The knob-like protuberances, stand out from the head one-third of an inch, and have a narrow neck, about one-half the width of the head of the protuberance, as seen in the illustration (Fig. 85). The bottom, as the drawing shows, is flat.

Fig. 85.



At either end is a hole drilled; in the front the hole is about a quarter of an inch from the end and drilled obliquely, until it meets the drilling from the neck, which is bored at a similar angle to the neck, as the under one is to the base. The holes at the posterior end are similarly bored. The material is hornblend.

If the stone is meant for a representation of some animal the holes would seem to be intended for the insertion of legs; but probably were used to insert a string or sinew, that the figure might be carried about the neck. We have never seen any large collection of these "Indian" relics, and do not know whether it is a common form elsewhere or not, but, as we previously stated, it is novel to New Jersey. It was ploughed up near the city, in a neighborhood where only axes and arrow points are to be met with, and those not abundantly. — CHARLES C. ABBOTT, M.D.

ORIGIN OF THE TASMANIANS. — Mr. Bonwick, in a recent paper "On the Origin of the Tasmanians, geologically considered," states that the Tasmanians have now become almost extinct, an old woman being the only survivor of the race. They were related in manners and in general *physique* to the neighboring Australians, but were allied by black skin and woolly hair to the distant Africans, while they were assimilated by resemblance of language, customs, and habits of thought, to many races scattered over vast areas. The author seeks to explain this relation by constructing an ideal southern continent, whence all the dark-colored races surrounding the Indian Ocean, and extending into the Pacific and southern oceans may have radiated. He regards the Tasmanian as probably older than the Australian. Dr. Hooker, whose authority had frequently been quoted in the paper, pointed out the similarity and differences that obtain between the floras of Australia, Tasmania, New Zealand, South Africa, etc. It has recently been found that the flora of the Howe Islands is very unlike that of Australia, although so near to the coast. He protested, however, against the inference that the line of migration followed

by plants is necessarily the same as that pursued by the higher animals. The president alluded to the great difference between the Australian and Tasmanian, especially in the character of the hair; and he regarded it as physically impossible that the Tasmanian could have come from Australia. He suggested that an interrupted communication by a chain of islands may have extended from New Caledonia to Tasmania, similar to that which now connects New Caledonia with New Guinea; and that by this means a low negrito type may have spread eastward over this area. — *Scientific Opinion.*

STONE IMAGES ON EASTER ISLAND. — A paper was read by Mr. J. L. Palmer, R. N., on a recent visit to Easter Island in H.M.S. *Topaz*. During the visit the singular colossal stone images which excited the astonishment of Captain Cook and the earlier voyagers were accurately observed and measured, and a specimen of them brought away to deposit in the British Museum. Mr. Palmer described the topography of this remote island in the South Pacific. It is only twelve miles in length by four in width, and lies in a part of the ocean far away from other islands, at a distance of two thousand miles from the coast of South America, and one thousand miles from the nearest Polynesian islands to the west. The island is entirely a volcanic formation, and presents numerous extinct craters, one of which yields the gray lava of which all the stone images are made, and another the red tufa from which are carved the crowns or hats that formerly rested on their heads. The present inhabitants are only nine hundred in number — a good-looking, pleasant-tempered, set of people. They belong to the Polynesian race, and have a tradition of their immigrating from Opara at no very distant period. The interest attaching to the island was an ethnological one, and concerned the race who sculptured the vast quantity of stone images now existing *in situ* on stone platforms in various parts of the island, or inside large stone chambers or houses. The platforms, chambers, sculptures, and mural paintings were described by the author with minuteness, but he did not propound any theory as to their origin. He stated that the inhabitants knew nothing of the matter, that they were undoubtedly of great antiquity, and that it was probable they were executed by a race who had long since passed away.

In the discussion which followed Mr. Markham mentioned the fact of similar images having been found by the early Spanish invaders in the cities on the banks of Lake Titicaca, in South Peru, and belonging to the Aymara nation. There existed, however, this difference — that the Aymara images were profusely sculptured. Recently a stone platform had been found in one of the Pacific Islands, one thousand miles to the west of Easter Island, at the bottom of a deep deposit of guano, and he threw out the suggestion that these were all relics of a very ancient people who slowly migrated across the Pacific from west to east. Mr. Franks gave in detail his reasons for concluding that the ancient remains

in Easter Island truly belonged to an earlier population of the same Polynesian race who now inhabit the island. Sir George Gray also expressed the same opinion, and spoke of the habit of carving images as being a peculiarity of Polynesians, including the Maories, and that in a place where wood (the usual material) was very scarce, as it is in Easter Island, it was natural that stone should be substituted. Mr. Palmer gave some farther details of the amiability and good conduct of the present inhabitants, who had been much improved by the Roman Catholic missionaries. Mr. P. P. Blyth also took part in the discussion, and the president, in summing up, mentioned the soft nature of the volcanic rock of which the images were made as supporting Sir George Gray's explanation. — *Scientific Opinion.*

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. — The meeting of the Association for 1870 will be held at Troy, N. Y., beginning on Wednesday, August 17th, having been postponed by the Standing Committee from the 3d, at the request of the Local Committee. We believe from the general expressions last year at Salem that this next meeting will be largely attended and will prove a most interesting one. The Local Committee is evidently doing all it can to make the meeting a success; and judging from the character of the gentlemen composing the Committee, its large size, and careful division into sub-committees on Receptions, Finance, Lodgings, Excursions, Rooms, Invitations, Printing and Railroads, we feel confident that the Association will be most cordially received and taken care of during the session.

We trust that the subsections of *Archæology* and *Ethnology*, and of *Microscopy*, organized at the Salem meeting, will be reorganized with a large attendance in these interesting departments.

The following are the Officers of the Meeting:— William Chauvenet, St. Louis, *President*; T. S. Hunt, Montreal, *Vice-President*; Joseph Lovering, Cambridge, *Permanent Secretary*; C. F. Hartt, Ithaca, *General Secretary*; A. L. Elwyn, Philadelphia, *Treasurer*.

Standing Committee.—William Chauvenet, T. S. Hunt, Joseph Lovering, C. F. Hartt, J. W. Foster, O. N. Rood, O. C. Marsh, A. L. Elwyn.

Local Committee.— John A. Griswold, *Chairman*; George C. Burdett, *First Vice-Chairman*; P. V. Hagner, *Second Vice-Chairman*; Benjamin H. Hall, *General Secretary*; H. B. Nason, *Corresponding Secretary*; Adam R. Smith, *Treasurer*, and seventy-seven others.

ANSWERS TO CORRESPONDENTS.

C. J. C. The plant found in flower June 21, on Mount Monadnock, is the *Arenaria Grœnlandica*. It is abundant on the summit of Mount Washington, and we have found it common at Hopedale, Labrador, where it grows near the shore of the ocean.